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THE NATIONAL GEOGRAPHIC MAGAZINE

PROBLEMS OF THE PACIFIC—THE GREAT OCEAN IN WORLD GROWTH*

BY W J McGEE, LL.D.,

VICE-PRESIDENT NATIONAL GEOGRAPHIC SOCIETY

THE greatest by far among great geographic features is the Pacific basin. If all the continents and islands forming the face of the earth were joined in one great continent, its extent would scarce equal that of the great ocean; and if the mass of all the lands of the globe above sea level were poured into the Pacific, barely more than an eighth of the basin would be filled. Three fourths of our world-surface is water; a full third of this vast expanse, or a quarter of the superficies of the planet, is that of the great ocean, while its abysses are of such depth that a full half of the water of the earth is gathered into its basin. In every view the Pacific is vast, so vast as to tax if not to outpass our powers of contemplation.

Nor is it only in the magnitude of the basin that the Pacific is vast; its area is indeed unequaled and its abysses unparalleled in profundity and extent, yet the great world-scar becomes far more striking when regarded as a record of processes in planetary growth, and still more when viewed as a theater of that vital activity culminating in the growth of races and peoples and the development of high humanity. The basin is bounded on the east by a wrinkle in the terrestrial face which on closer view resolves itself into the longest and second highest mountain system of the world, whose rocks must hold our best record of earlier world-making; its other side, half a world-circuit away, is skirted by our greatest continent and several subcontinents, which must give the globe's best record of the later stages in world-building; while half its expanse is studded with islands which must tell eloquently of world-making whenever their

*A lecture before the National Geographic Society, April 9, 1902. The summary and final lecture of the Afternoon Course of the season 1901–1902 on the general subject, "Problems of the Pacific." The course comprised also "Japan," by Prof. Ernest F. Fenollosa, March 12; "Australia and New Zealand," by Henry Demarest Lloyd, March 19 (published in this number); "The Lesser Islands," by Dr. C. H. Townsend, March 25; and "The Commerce of the Great Ocean," by Hon. O. P. Austin, April 2 (published in this volume, pp. 303–318).

mute testimony comes to full interpretation. Lesser chapters of world-growth may be read from the shorter records of smaller provinces; longer chapters are read from the fuller records of larger provinces, such as those of our own well-studied continent; but it cannot be doubted that the fullest record of all will be found in the foremost of geographic features, to form the body of the book of world-history. If, as biology and paleontology seem to teach, the earliest living things on the globe were aquatic if not marine, it would seem probable that the life of the world began somewhere about the present Pacific, and spread thence over the growing continents eastward and westward, as well as northward and southward until the eternal barriers of arctic and antarctic ice were built out from the poles of the cooling planet. Hazy as the vital vista may be in its remoter stages, there is nothing questionable about the leading role of the Pacific as a factor in the later life of the globe; the horse, as shown by Marsh, and the dog, as held by Osborn, are among the animals that came up on the eastern purlieus of the Pacific, to be somehow translated to the western border-land during later geologic times; the paths of several migratory birds still cross the narrow northerly portion of the Pacific in such wise as to bind hemispheres into a single faunal province and prove that the avian instinct outlasts continental outlines; while Cook contends that the palm, and perhaps the banana and other plants, must have been carried across the Pacific from east to west by human agency after prehistoric man reached the plane of primitive husbandry. Still less is there question as to primacy of the role played by the Pacific in human development. Counting in the basin the lands draining toward its depths, the Pacific province is the home of half the population of the earth; the abiding-place—if not the birthplace—of the black, yellow, brown, and red races of mankind, and now the realm of the white; the seat of societies ranging from the lowly clanship of the prime to the most resplendent empires of history; the field of cultures rising from bestial savagery to the world's highest enlightenment.

Such are some of the aspects of the earth's greatest feature, of that boundless theater of life and human activity on which the eyes of the world are turned today.

THE GENESIS OF THE OCEAN

Foremost among the greater problems of the Pacific is that connected with the origin of the basin in which the great ocean is cradled; and this problem can hardly be approached save along the lines of world-growth suggested by the relation of our sun and other stars, our earth with the rest of the planets, and our moon with the other satellites of the solar family—for the problem of the Pacific basin is large enough to be viewed as a cosmic problem. Since the days of Laplace, author of the nebular hypothesis, the attention of astronomers has been attracted by the great world-chasm, and several students have conceived it as the scar left by the off-casting of the moon during an early stage in the condensation of the earth from a primordial chaos of matter. The latest noteworthy discussion of these views of the Pacific is that of G. H. Darwin, son of the naturalist, and our leading authority on tides. "According to his luminous theory the tidal action of the sun on the viscous earth formed two protuberances at opposite points of the equator; one of the protuberances broke away and solidified as the moon, which revolved around the earth much nearer than at present." So Gregory summarizes the conclusions of the eminent mathematician (Smithsonian Report, 1898, p. 366). Another view of the great basin connects it with the general

warpings and the flexures or fractures of the earth-crust marked by other large geographic features, all supposed to grow out of a tendency of the terrestrial ball to approach the form of a tetrahedron with the slow shrinkage due to secular cooling. This theory of a "tetrahedral earth" is far too elaborate and many-sided for summary in a sentence; it must suffice to note that it was framed by Lowthian Green during a long residence on one of the islands in the great ocean and under the inspiration of its grandeur, that such geologists as Gregory in England, and Emerson and Hitchcock in this country, have viewed it with favor, and that our fellow-citizen, Preston (of the Coast and Geodetic Survey), thinks "Nothing is more in accordance with the action of physical laws than that the earth is contracting in approximately a tetrahedral form" (*ibid.*, p. 377). It is just to say that certain other geologists and physicists are less attracted by the enticing view outlined by Lowthian Green; they hold that the hypothesis requires greater rigidity in the earth-crust than that attested by various well-known facts of geology. So, too, the view that the Pacific basin is a moon-scar is rejected by some thinkers; for example, our associate, Gilbert, would have it that our luminary of the night was probably formed more largely by accretion of cosmic matter than by robbing our planet of so much of her substance. Yet, whether the views—either or both—be accepted or rejected, they are well worth weighing; they are products of great minds, and must stimulate our powers of contemplation and emphasize the magnitude of our greatest geographic feature.

If a trace of personal conviction may be infused in the discussion of so broad a field, it may be questioned, first, whether either the astronomical or the physical hypothesis is necessary, in view of the great fact that the Pacific basin is precisely like the other oceanic basins in kind, differing only in degree of magnitude; and, second, whether the legion islands of the sea stretching from Hawaii and Easter Island to the borders of the Asian and Australian continents do not prove that this greater part, at least, of the vast basin is but a drowned land whose higher peaks and volcanic vents still rise above sea as monuments to its former greatness. Certainly there are many points of similarity between our own Antillean and Bahamian outliers and the seemingly boundless archipelago stretching a third of the way round the globe from Asia and Australia; certainly, too, the unavoidable inference that our lesser archipelago is a series of culminating points of an ancient land gives warrant for a parallel inference with respect to the insular peaks projecting above the waters of the Pacific; and certainly, again, the geologist's necessity for a Paleozoic Atlantis as a source of the five-mile-thick formations of the Appalachian zone must be shared by those delvers in the rocks seeking the source of the vaster sediments lying between the Himalayan crests and the littorals of the Pacific. It is not to be forgotten that whether the low mountain be old or young, the high mountain is always a young mountain; nor is it to be forgotten that the volcano and the earthquake are symptoms of general geologic activity with attendant geographic changes. So the bleak heights of Thibet and the steep footslopes below, which feed the mighty Hoangho and the Yangtse so fully that they in turn color the Yellow Sea with their silts; so, too, the recurrent earthquakes of Japan and neighboring islands; so also the island volcanoes, led by Krakatoa, whose last outbreak shook half the earth and blew dust-clouds to the remotest lands—all these and many other stupendous phenomena are among the indications that the internal forces and agencies of earth-making culminate somewhere about the great archipelago

of the farther Pacific. And the magnitude of the internal force attested by these outward manifestations is ample to account for even so great changes in the earth-crust as those involved in likening the broad Oceanian archipelago with our own Bahamas. Other reasons for viewing Oceania as a mountain-set land drowned by subsidence during a later geologic age might be drawn from the laws of continental growth; but these may be passed over.

Accordingly, the problem of the genesis of the Pacific must be left open pending research in many lands and along many lines; yet for the present it would seem safer to regard this greatest of geographic features as the product of proper earth-movements and consequent geographic changes rather than a direct heritage of cosmic interaction—the birth of the basin may better be viewed as of the earth earthy than of the stars starry and remote.

THE PACIFIC AS A VITAL PROVINCE

During most of the time since earth began the great ocean was, like other provinces, mindless, scriptless desert; and it remains in exceptional degree barren because of the poverty of its paleontologic record—for the fossil record is one of fecund shorelands and fruitful inlands rather than watery wastes. So present knowledge must rest on the probability that, despite the changes of the ages, despite the shifting of seas and the liftings of lands, some part of the world's greatest and deepest ocean was also the world's earliest ocean, with the consequent probability that aquatic life began within or about its bounds. The course of development of living things from the lowly forms of the prime to the motile organisms of the deeps, on to the plants pushing out over pristine lands, then to creeping and flying things, and thence up to the era of brute strength, and finally to that of cunning and slowly brightening mentality, was far too long and devious to be traced without the constant help of fossil records; yet it is worth while to note that the rich flora of Pacific shores and the abundant fauna of Pacific depths seem in themselves to tell of long-continued and largely independent vital development. True, the field is so vast that the naturalists of the world have been able to touch it but here and there; even such vigorous work as that directed by Agassiz and described all too briefly by a speaker in this course (Dr Townsend) does little more than reveal the wealth of the province, so that what may be called, by extension of a current term, the vital statistics of the Pacific remains a sealed book. It is indeed known that the marine fauna of the Pacific is notable for the high proportion of distinct forms, the large number of unique genera and species of fishes, as well as of other orders of sea-born life. It is known, too, that the great ocean forms a congeries of faunal districts vaguely limited by latitude and more sharply defined by varying depth with the attendant changes in pressure, light, and heat from sun-kissed surface to freezing and darkling deeps where organisms must either produce their own light by obscure organic processes or live in eternal gloom; yet it would be rash even to attempt listing the species of any of these districts, much less those of the entire basin, save as a record of advancing knowledge and a guide for further research. Stretching as it does half way round the globe near the equator and thence to both polar ice-fields, ranging as it does from sunny shallows to frigid depths, and holding as it does half the water of the globe, the Pacific is a reservoir of marine vitality of capacity passing our standards of measure; the scattered facts gathered by naturalists are at once suggestive and promising—suggestive of long, long development in the unwritten past as well as of present

richness, promising of future wealth when men learn to convert the seas into pastures and preserves for living things useful to their kind.

Herein lies one of the greatest and most enticing of the problems of the Pacific: How are the watery wastes and the abounding vitality of the great ocean to be reconstructed and rendered available for human benefit? When an international tribunal discussed the seal question a few years ago, two of our associates—General John W. Foster and Mr J. Stanley-Brown—were almost alone in grasping the idea that open ocean will some day be brought under human subjection as feeding grounds for useful organisms, just as are the narrower fields and pastures on land; yet the concept is growing, and the problem of ways and means is destined to become a burning one in the early future.

THE PREHISTORIC PACIFIC

It is a convenient custom to apply the term "prehistoric" to that earlier part of the human era—the Psychozoic age of Le Conte—stretching from the advent of man, either in particular provinces or on the entire globe, up to the stage at which writing arose and records began. This was the prescriptorial stage of human development, and the period, with its remains and relics of early humanity, forms the major part of the domain of archeology. Now, the archeology of the Pacific is a nearly untrodden field, and teems with problems of most attractive character. Thus the home of what would appear to be the earliest known human prototype has been found in modern Java, on the borders of the great ocean, in Tertiary deposits attesting profound geographic changes since the scattered bones were entombed. Thus, again, the uttermost island of the Oceanian archipelago, Te Pito Te Henua, or Easter Island, abounds in most impressive monolithic sculptures of a size so gigantic as to recall the Titanic relics of Yucatan and Peru, Egypt, and India, yet whose origin and age are wholly lost in the obscurity of the unrecorded past; and, similarly, various other Pacific islands contain relics or ruins attesting a former population of which no known tradition survives among the living inhabitants. No doubt the greater part of these relics await discovery, while the story of all remains to be wrought out as our knowledge of the islands and shorelands advances. So well informed a student as Archibald Colquhoun suggests that Easter Island must have been originally peopled from South America, and it is simple and easy to so extend the suggestion as to explain similarly the peopling of the more westerly islands by a stock of navigators skilled in rock carving. True, the distances are so great and other difficulties so numerous as to render the suggestion of little weight in the absence of direct archeologic evidence; yet it is worth remembering that the supposition is in line with the suggestion of Professor Cook that the palm and other tropical plants were carried westward by human agency after their character was shaped by cultivation on the American hemisphere. It was an early view that America was peopled from Asia by way of Bering Strait. This may be so; yet it is important to recall that the only absolutely known crossing of Bering Strait by a primitive folk was that of the Eskimo working their way westward from America to Siberia; and during the last decade the scientific collaborators of the Jesup expeditions about the northern shores of the Pacific have found clear indications that the mythologies of such aboriginal Asian peoples as the Tchukchi originated in America and found their way across the northern seas during prehistoric times. Both relics and traditions indicate that Chinese and

Japanese junks have been swept to American shores by wrecking storms, and it is easy to imagine the peopling of America by such accidents, or by designed voyages through the same waters in the darkness of the prehistoric; yet on the whole the indications are clearer that Asia was peopled in some part from America than that America was peopled in any part from the great continent beyond the Pacific.

If personal opinion based on original research may again be ventured, the probabilities may be summarized in this way: First, that the Old World and the New were separately peopled by autochthones—by veritable children of the soil, growing up independently from unknown ancestry in families and clans and tribes which have merged and blent and integrated into ever larger groups during the ages; second, that the chief resemblances in arts, customs, faiths, and even in languages, are the product of similarities in environment, and hence in conditions and modes of life; third, that there were occasional interchanges both eastward and westward, though these were not of such extent as materially to affect the course of racial and cultural development; and fourth, that the extensive peopling of the Oceanian archipelago may be connected with the geographic indications of relatively recent subsidence of a mountain-set land whose island crests were places of refuge for tribes and peoples displaced by gradual inundation of one-time lowlands now wholly submerged. Anent the last of these probabilities, it is to be observed that many of the Oceanians are masters of a peculiar craft or sense employed in navigating their proas and out-riggered canoes; they regularly traverse scores or hundreds of miles of open ocean beyond sight of land, without compass or sextant, by following traditional lines in the water invisible to the better eyes of Caucasians, seemingly under the guidance of an instinct analogous to our own feebler instinct of orientation, or sense of direction. The apparent homology between this sense of the Oceanian navigators and the instinct of the migratory birds which still traverse the northern Pacific (just as the European quail spans the Mediterranean in spring and fall migrations) is strikingly close; and much as the naturalist sees in the persistence of migration routes an instinct outlasting geographic boundaries, so the anthropologist must contemplate the possibility, if not the probability, that the invisible sailing lines impressed on the brains of Samoan and other islanders must date back to earlier geographic conditions when the stretches of open sea were shorter than now.

All these suggestions as to the prehistoric Pacific are of use chiefly in pointing to the problems of the great world-basin. The archeology of the islands and shorelands is no better developed than the biology of the littorals and deeps; and in either case only enough is known to sharpen the mental appetite for more and better knowledge.

THE PACIFIC IN HISTORY

Passing over the hazy legends of geographic adventure (connected chiefly withIndian Ocean though approaching the Pacific) from the fable-tinged search for the Golden Fleece by Jason and the echo of the discovery of Australia by Norsemen up to the veritable but ill-recorded journeyings of Marco Polo, the history of progressive discoveries in the Pacific comes up as an alluring tale, abounding in adventure, bristling with exciting episodes, and big with lessons for modern men and up-to-date enterprises. Seen first by Caucasian eyes when Balboa sighted its silvery expanse in 1513, the conquest of the great ocean began when, in 1520, Magelhaes—better known as Magellan—entered the basin through the stormy South American strait still bearing his name; and the

progress of this plucky sailor's party westward by way of the Ladrones to the Philippines, and thence on and ever westward until the globe was girdled for the first time by human enterprise, was not merely a signal fact but a pregnant prevision—a truly prophetic portent whereof the vision and interpretation were caught with marvelous insight by the philosopher-poet Berkeley:

Westward the course of empire takes its way;
The four first Acts already past,
A fifth shall close the Drama with the day:
Time's noblest offspring is the last.

A pity that the poetic measure and current meaning of pre-Revolutionary days should have met in "empire," the end of the fourth "Act" (or stage in human progress) and but the painted scene for the fifth! But, after all, the essence of the fifth Act *is* empire, albeit of freedom and humanity rather than the mingled tyranny and trumpery "such as Europe breeds in her decay."

Magellan's fate, like that of many other explorers, was tragic; the killing of Captain Cook on Hawaii, and the mutiny against Captain Bligh on the good ship *Bounty* at Pitcairn Island were typical—they served to stimulate curiosity and cupidity, and guided the ever-springing ambition of vigorous men to go, to see, and to conquer.

During the last century Caucasian discovery proceeded apace along far too many lines to be followed in an hour; but one of the lines was of such significance as to demand a moment's thought. While still in the flush of national growth following the annexation of Texas, the acquisition of California, and the Gadsden Purchase, American seamen sailed distant seas and looked on new-seen isles as treasures trove; and the American Congress in 1856 enacted a law authorizing American citizens to claim, acquire, and possess islands discovered in the broad Pacific. Several were so acquired; some were taken formally and officially by the Navy of the United States. Notable among these were two of the "Line Islands" lying under the equator in mid-ocean; in 1858 Commander C. H. Davis, U. S. N., took formal possession, in the name of the United States, of Jervis Island, in longitude 159° 58′, and New Nantucket (or Baker Island), in longitude 176° 32′ (*i. e.*, within little over 200 miles of the anti-prime meridian dividing the western hemisphere from the eastern), and formally reported the annexation to the executive and legislative branches of the government amid acclaim eclipsed only by that evoked by his own record in the stirring days to follow.* During that decade as in decades before, Spain was relaxing diligence in the Pacific, Russia was clinging closely to northern shores, Portugal had passed her prime, Germany was full of the affairs of the Fatherland, the sun of Japan was not yet risen, and there was none but Britain to oppose the bridging of the Pacific by American enterprise. The day of Oceania seemed to dawn; the legion islands seemed stepping-stones for the youthful giant among nations, stepping-stones stretching to far Cathay and farther Ind. Such was America's promising place in the Pacific toward the end of the fifth decade; but even before the opening of the sixth the ardent growth-flush paled before the threat of domestic dissension, the energy of civilian and navalian voyagers was concentrated at home, and the nation withdrew for a season from the Oceanian field. Thus fell an unreckoned tax of the Civil War—a tax beyond easy summing, and one never to be paid in full. The paralysis of American enterprise in the Pacific was complete; gains ceased, losses began; the Stars and Stripes floated figuratively

* An account of Commander Davis' peaceful conquest with a description of the islands has just been published by James D. Hague in the *Century Magazine*, vol. lxiv, September, 1892, p. 653 *et seq.*

over Jervis and New Nantucket until 1889, when H. M. S. *Cormorant* sailed by, gorged the former at a gulp, and thrust a clinging claw through the strong Yankee aroma of the name half shielding the latter; other footholds were forgotten, and the American flag inclined homeward—until Alaskan opportunities and Hawaiian appeals rekindled the earlier flush of normal growth, and the Star-spangled Banner was again unfurled to the outer world. During the lost decades Russia reached out to Pacific ports, Germany grasped some oceanic gems, Japan jumped into the foreground of the national stage, while our insatiate cousinly—cozenly?—neighbor pursued the tiresome tactics of the Forty-ninth parallel, the Maine line, the seal islands, the Alaskan boundary, and all the rest—in the words of the down-south camp-meeting, "Jes' inchin' along, inchin' along, inchin' along to'a'ds Glory." So began, and so ended, the first era of American expansion in the province of the Pacific.

Meantime other, albeit feebler, forces were at work; other, albeit softer, races than the Caucasian were pursuing the paths of human destiny, paths leading ever from lower planes to higher—for of such is the course of human progress. The black men of the Austral subcontinent and of the insular bridge leading thence from man's primordial cradle on Asian and African coasts retreated before exuberant Nature, shrank from the touch of higher intelligence, fled the beast-gods of their own mystic creation; for as glimpsed by Kipling,

> This is the story of Evarra—man—
> Maker of Gods in lands beyond the sea.

The brown men of the islands and shorelands pressed forward in physical development until the Samoan excelled the Greek in bodily vigor and statuesque beauty; but since the end of the brown man's ambition was ease and comfort, with but occasional spurts of strenuous exercise, the world was not rewrought at his hands. The yellow man of the shorelands studied in a severer school and learned to spare no toil or effort, so that he rewrought his own fraction of the world in his own patient way, and raised his Flowery Kingdom to the highest rank of empire, only to stop at his own walls of exclusion. Meantime and after, a strain of brown and yellow blent, and, invigorated in the mixing after a curious law of human development, found lodgment on an island province; and there the generations were pent and trained in Nature-conquest until they developed a vigor and prepotency of blood and brain which, in the fullness of time, enabled them to take rank among the world-makers—for in this class the Japanese must ever stand. The story of China through her uncounted cycles of steady growth, through her slow but certain rise from barbaric faiths to a practical cult of the Golden Rule, through the tedious stages of germinant letters and arts, was well summarized in our course of lectures on Asia a year ago; the more acute activity and swifter progress of Japan, with the peculiar senses of humanity and artistic perfection so well developed among her folk, were clearly protrayed in the initial lecture of this course by Professor Fenollosa; while other facts and features of oriental progress are too many for easy telling.

The brown and the yellow and the mixed strain were still on their upward course when the white stock pushed across the great ocean; the contacts and interactions soon brought up a series of problems for solution by the hard processes of living experience; yet the greatest of these problems, the greatest, indeed, in all human history, remain unsolved today—and their name is Legion.

THE PROMISE OF THE PACIFIC

When the area involved is half the earth; when the continents are four out of five, and the races all of our five; when the countries are a score, the great islands a hundred, and the islets a myriad; when the population is uncounted hundreds of millions, and when the interests cover all those known to human ken, the problems of progress become too complex for full statement, to say nothing of definite solution. Yet when it is realized that the essential problems of progress *are* problems, the way is opened for statement, if not for solution, of the leading questions; for, thanks to the modern science which has been called the New Ethnology, the general trend of human progress is no longer obscure. It cannot be too firmly held and too often stated that human development may be defined by stages, each reflecting the endless series of interactions between the human organism and the environment, and each measuring a long step in mental growth. The stages may be defined in many ways; they are most conveniently expressed in terms of social organization. So defined, the first great stage (passing over the shadowy one of the prototype) is that in which customs with all the power of law are based on blood kinship traced in the maternal line, and in which the men are warriors; the next is that in which custom and formal law are based on consanguinity traced in the paternal line, and in which men become patriarchs; the succeeding stage is that in which elaborate laws, with attendant customs, are based on proprietary and hereditary rights, especially in lands, and in which men are sovereigns and subjects; the final stage is that in which formal law merges into equity based on the recognition of equal rights to life, liberty, and the pursuit of happiness, and in which men are citizens. It is true that these stages intergrade or overlap in some measure; yet the great fact remains that humanity may be defined in terms of these developmental stages more comprehensively and more usefully than by any other means thus far devised—for the stages are measures of humanity itself. For convenience they may be designated as (1) the unobserved, or primordial stage; (2) savagery, or the warrior stage; (3) barbarism, or the patriarchal stage; (4) civilization, or the monarchial stage; and (5) enlightenment, or the stage of citizenship.

With the great stages of human progress in mind, it becomes clear that a change has come o'er our dreams of conquest since the days of blood and rapine, which are to be remembered but to be deplored, and that the conquest now to be sought and wrought in the fullness of time and ever-multiplying opportunity is not the subjection or enslavement of helpless weaklings of alien blood or darker color, not the forcible capture of ill-defended lands, not the loot of stores and razing of pagan temples, but the moral conquest of lower races and more backward peoples — a conquest conducted at every step under principles of high humanity and the law of the greatest good to the greatest number. In the light of this ideal, the problems of the Pacific are simplified if not unified. Anglo-Saxon vigor has extended to every part and corner of the great province; in Japan it is represented rather by ideas and mechanical devices than by blood; in China it has been represented by the protection of the weak rather than the destruction of the strong; in the Philippines it is represented by the most patient efforts toward peaceful possession in the history of the world; in Australia, despite many dark chapters, it has been represented by the conversion of the wilderness to blossom as the rose; in New Zealand, as well shown by one of our number (Henry Demarest Lloyd), it has been represented by the world's most promising social experi-

ment. Yet the tale of what we call Anglo-Saxon vigor is but part of the story; for the history of a century has shown that the vigorous folk of northwestern Europe came to their own in its fullness only after they had journeyed afar and engaged in new struggles for conquest over Nature and for the amelioration of their kind. So it was that America arose to the culminating plane of human progress, to the enlightenment kindled by Washington and his co-workers; so it was that Australia attained distinctive national character as a new chapter in world-history through the effects of labor in new lands, the blending of new lines of blood, and the birth of new generations; so it was also that the miniature continent of New Zealand—Lloyd's "Newest England"—reached her unique social condition after strenuous interactions between white men and brown. In the light of the law that blood is not all, but that culture, or moral force, is the final factor in the shapement of progress, the bow of promise may be seen by eye of hope to hover over the islands and the shorelands alike, about the vast expanse of the great ocean; for, in the light of this law, it is the great Nation of Enlightenment which must exert the moral force required for the reclamation of the islands of the sea and the lands beyond—

Time's noblest offspring is the last.

Most eloquently and effectively did our last speaker—Mr. Austin—show that the Stars and Stripes now gleam through clouds of doubt and smoke of uncertainty in every part of the Pacific province; yet a still brighter feature than that of commercial conquest is that of the moral conquest, the human renovation, to which the best efforts of our citizens are directed.

And of such is the promise of the Pacific.

PROBLEMS OF THE PACIFIC—NEW ZEALAND*

BY HENRY DEMAREST LLOYD,

AUTHOR OF "NEWEST ENGLAND," ETC.

THERE is a country on the other side of the world which is known to its admirers as the experiment state of modern democracy. It has made itself more talked about politically than any other country of recent times. Though a small country, it is a very large laboratory of social science. Its admirers describe it as the political advance-country of the world, so confident are they that in its evolution it is only the leader in the path in which we must all follow with our democracy; they look upon it as a sort of contemporaneous posterity, as if it were a present mirror in which the twentieth-century democrat may look his grandchildren in the face.

This country, which lies under our feet, is New Zealand, our antipodes—antipodes in more senses than one. I went there two years ago in order to see for myself what might be found out about the achievements of this country which had been so much praised as it was seen by the eyes of its admirers; to

*An address before the National Geographic Society, March 19, 1902.

study for myself upon the ground what might be the truth in what they say.

That I did not find any perfect people, any realized Utopia, any coöperative commonwealth is true; but I did find there that people of our kind confronted with our problems have found a solution so adventurous and so successful that it is of surpassing interest to us all, as much so to those who do not agree with the methods employed there as to those who do; and if it be true, as believed by its admirers, that the democracy of the future is rising in this new land of human rights in the Pacific, then those results are of especial interest to us, because they mark the path along which our own future is to go.

New Zealand is like Japan, a country to the south of the Orient what Japan is to the north. It is like Japan in the beauty of its climate; in the beauty of its scenery, which wins the hearts of all comers. It is like Japan, very windy, except that in the New Zealand Parliament they have a time limit on speeches, which is very rigorously enforced. The scenery of New Zealand is an epitome of the best scenery of the world. There are Alps as glorious as those of Switzerland; lakes as beautiful as those of England; mountains among the highest and grandest in the world, as grand as those of Norway, and rivers rivaling those of the Orinoco and the Amazon. There are beautiful flowering trees, spreading their canopy of pink and white and purple over the landscape, with the red tree, the king of all.

There are some earthquakes and volcanoes there, and you will learn from the conservatives of New Zealand that the old-age pension laws, labor laws, and some of their other innovations are among the most dangerous of their earthquakes and volcanoes.

A traveler from a country so far away is expected to bring with him at least something of the marvels which are to be found there; but New Zealand, let me impress upon you, is not a country of the abnormal, neither in the home nor the nation; neither is it abnormal in its social life. New Zealand is a country of the normal. It is normal in its natural characteristics, in its people, and from my point of view it is normal in its institutions. They have, however, one thing which might possibly bear mentioning in passing, because it appeals to the curiosity of the traveler, and because, like so many of their natural features, it is an allegorical metamorphosis. They have a caterpillar that after death turns into a plant and blossoms and goes to seed, and to all appearances it does so in the plain way that is usual with the cryptogams, to which family it belongs.* But it has been stated that there is a certain parallelism between the metamorphosis which takes place in the case of the New Zealand insect and that which takes place in the human world; but there is this difference between the change which takes place in the human case and in the case of the New Zealand insect, the human worm in New Zealand does not wait till death to blossom.

Every country must be either an experiment or an efflorescence. Japan has flowered into that exquisite art which has done more to influence the esthetic development of mankind than anything since Greece gave the Milo to art, and New Zealand has flowered into democracy. There waited the last piece of virgin soil on earth where Britain's race could expand its governing genius, its institution-making genius—for our genius to govern ourselves, I hope, is an institution-making genius. There waited the last piece of virgin soil on earth where the race could expend its governing genius and free from the slavery of monarchical vested rights, and, what is

* The insect is the "white grub," or larva of the May-beetle (*Lachnosterna fusca*); the fungoid plant which springs from its head is the "white grub fungus" (*Torrubia rarenelii*).—W J M.

worse, vested rates—free from the unfulfilled seductions of power a subject race.

Never was there a race with the strength of mind and the strength of body like that which British colonists found in New Zealand waiting for them. Of the strength of mind of the Maori you may judge by a remark made to me by one of them, who said, "They came to teach us to pray to God, and as our eyes were uplifted in prayer they stole our land from under our feet." The larger parties of Maori on the warpath found their enemy famished for the want of food, helpless from weakness; they did not fall upon him and exterminate him as his brothers in all Christian countries would do. They proclaimed a truce and sent their enemy a full half of the finest provender in their larder. This was not from any motives of magnanimity, but because they, first of all, wanted a good, square, stand-up fight, and wanted to fight well in order that they might rest well.

This strength of the Maori arises from a peculiar situation in the conditions of New Zealand. Although theirs was this exquisite country, perfect in soil and perfect in climate, although it was a beautiful house when the first Maori lived there, it was an unfurnished house. The Maori had to fight so hard for their living that they acquired the vigor that enabled them to struggle with equal ardor and equal strength for their rights. And hence it is that in this splendid new country it is their work which has counted in raising to such height its social and legal rights; and in these they are thoroughly recognized as factors—you see the Maori policeman walking right by the side of the English policeman, equally respected, equally feared. The Maori shares the same benefits in the land laws and in the other institutions of the country. There are two Maori sitting in Parliament, and since I was there a Maori gentleman, a real gentleman, has been called by the government into the cabinet and now sits beside the premier, one of the magistrates to hear and decide upon questions of the country.

This perfect land that I have described to you is inhabited today by the most perfect Anglo-Saxon people to be found in the population of the world; English principally, then Scotch, and just that touch of Irish which is needed to give perfection; and this population constitutes today the most homogeneous, the most compact, the most energetic, and the most manageable democracy in the world. And in tracing some of their recent achievements, bear in mind that New Zealand was not settled by exiles, patriots driven from home, nor by martyrs seeking freedom of religion, nor by social enthusiasts seeking to found a new and perfect state. Not at all. New Zealand was settled by middle-class capitalists, almost all of whom were merely seeking to better their condition. The English gentleman left the social question behind him when he went there. He took with him political questions, probably because he was an Englishman; and it came to be that by 1890, when only 50 years old, New Zealand, the youngest of the nations, found itself the oldest in economic iniquity and sin.

The people found themselves caught in the strongest grip of the modern social problem. There was the land monopoly, almost worse than that of Ireland, because it was not only a monopoly of absentees, but the absentees were corrupt, and there was not in New Zealand, as there was in Ireland, the alleviation of representation in the Imperial Parliament—an alleviation for the Irish, not for the Imperial Parliament.

There was also the money monopoly, which in the country and in the cities was in the hands of a few men who had learned how to combine and keep the screws twisted about the necks of the

rest of the people. These two monopolies had done what monopolies always do—they had gotten control of the government; and the government of New Zealand was a government of monopolists, by monopolists, for monopolists, and there followed the result which always will follow on the application of such power and such motives in so wide a field as that of human welfare. The farmers in the country were effectually turned into tramps on the roadside; they were followed there by the farm laborers and by the country tradesmen, and the cities became centers of congestion of the entire population. Then those scourges of our modern civilization—shelter houses—were established; soup kitchens followed. Then began an exodus of the best blood of the land, the young men and women from the farms, brought up on farms, wanting farms, knowing how to farm, having money and stock, and taking them to find footing in another land. All this because the monopolists wanted the soil.

At this moment occurred what proved to be the turning point in the history of New Zealand—a great labor strike, called the miners' strike, followed by a strike of the seamen of the companies which controlled the steamship lines running between New Zealand and Australia and the rest of the world. This was fought in extreme bitterness and brought the country to the verge of civil war. But the strike was a failure.

Just why this should have broken the heart of New Zealand it is difficult to say, because New Zealand is not a workingman's country. Like our own country of America, it is particularly an agricultural country. But they had learned the secret of sympathy with others who are oppressed, and could sympathize with the workingmen. Whether it was that they were then ready to move and unite, and wanted some one to give the initiative, and that the workingmen gave this initiative, it would be hard to say. But whatever the reason was, the people of New Zealand turned to find a remedy, and they did find it. There was only the one side on the next election day in New Zealand. It stood for the workingmen, with the exception of a very few of the conservative party. It was a revolution. One of its leaders said it was a substitute for the French revolution. It was a bloodless revolution, but it was a revolution.

You know that in times of great public suffering and calamity, in times of panic, there is a natural tendency to turn toward a revival of religion. In this case the people of New Zealand turned to a revival of religion, but in their case it was a revival of democracy, the best kind of religion.

Now, to show you I am not using too strong a word when I describe this as a revolution, let me give you as rapidly as I can a compact review of the things which have been done under the inspiration of this revolution. I think I shall be able to make good to you the proposition that there is scarce to be found in all history the equal of this movement; neither in the number of problems attached, nor in their novelty, nor in the success of the movement has there ever been found anywhere in the world by any democratic people an equal evidence of the breadth and political capacity of the common people.

New Zealand had been a country of landlords, yet the system of tenants was entirely revolutionized, and in its place federal ownership of the public land was substituted. A tax was placed on land and on incomes, and these taxes were naturally made progressive, so that the more land a man had and the greater his income the more taxes he had to pay. By this means the government accomplished what was their darling purpose, the abolition of the millionaire and the pauper. New Zealand is a lovely country, entirely devoid of the ordinary as-

sailants of animal and vegetable life. But the worst of pests came to them—the social kind. When the New Zealander talks of social pests he means the plutocrats and the paupers, and in order to remove them he removed the false credit system of government. In the construction of their public works the directors have been abolished to as great extent as possible. The New Zealand public works, the New Zealand railways, bridges, and school-houses are constructed by the government, which makes contracts with its own laborers without the intervention of the director.

Then the land system was changed by means still more thoroughgoing than this: the government began to take back the land, in order to break up the land monopoly. It did this in two ways: one was purchase by negotiation; the second was purchase by condemnation, if owners were not willing to sell.

The land itself was then cut up into smaller tracts for the benefit of the farmers; and they especially recognized in their distribution the young men and women whom we saw leaving during the exodus, by giving garden and suburban spots to such as wished to live in the country. For such there are special trains to take them to and from their work; they have a road which makes special rates and runs special trains. That is what the government has done for them; but in New Zealand the "government" and "the people" are interchangeable terms, and the people in the cities have clothed themselves with power to take by the same methods of condemnation any new tracts of land, which are then subdivided and sold to the inhabitants in small tracts.

To describe this system fully at this moment would not be possible, but briefly it may be stated that when the land with all its advantages goes to its new owner it can never again be rolled up into great estates and never again be allowed to lie idle. This land must always be kept in use and can never again be consolidated into the great tracts held by the land monopolists, who made the revolution.

The railroads are also the property of the people in New Zealand. The first thing the revolution did was to place them in the hands of a minister for railways, with a seat in Parliament, for the express purpose of making the railroads responsive to popular pressure, which has been the result.

They have adopted a system of factory laws more minute, more advanced, and more progressive than those found anywhere else in the world. One of them forbids any woman to work in a factory until her new-born child is at least four weeks old.

They worked out their great method of dealing with the labor problem of the world, an experiment the success of which has been phenomenal, by means of compulsory arbitration of labor disputes. And so today New Zealand is a country without strikes, and for the past six years has been the only country in Christendom which has presented the spectacle of a country without strikes.

There cannot be a panic in one country of the world that does not show itself in the others. The panic of 1893, traveling on its path of destruction, reached Australia on time, and struck it, and struck it hard, on the first of May, 1894. There were then in Australia, in full and flourishing operation, nine hundred million dollars of capital. Six weeks later there were only four hundred and fifty million; all the rest had been swept out of existence in six weeks in consequence of the panic.

This monster started for New Zealand, but it never arrived there. The people took possession of the principal bank, took it with the full consent and approval of the owners. The government said to the people of New Zealand and to all the world, "This bank has

behind it the undivided resources of the whole people of New Zealand." That bank stood, and that bank stands today. All the business houses and manufactories and other institutions stood, and of all the places in the world the only one where the panic of 1893 was never able to set its foot was in the home of the New Zealand democracy.

The necessary funds to avert this evil were raised by a means so simple that when you hear what it was you will feel as the friends of Columbus did when they learned from him how to make an egg stand on end.

The people of New Zealand, acting in their collective capacity as a country, went into the London money market, and there, upon their security as a people and their government bonds, they borrowed fifteen millions of dollars at the low rate of interest which a nation of good credit can always command. This money thus borrowed so easily and quickly in the London money market by these new-fashioned democrats was brought home and loaned out to themselves as individuals at the low London rate plus only a small percentage necessary to cover the cost of the operation and the risks. The rate of interest was at once cut in two, and this not only for the people who borrowed, but the government cut in two the usual rate of interest and fixed the rate for the entire country.

Now, notwithstanding the losses incurred—through mistakes of the government, through fires and other losses, through mistakes of single borrowers, through fraud of all kinds, in principal and interest—not one cent, either of that borrowed by the government or the people, not one dollar of principal or interest remains unpaid.

The government of New Zealand did more than this. Following the lines of least resistance, they saw that the government of the people, being for the people, as an economic concern, could be made as well a political concern, and could become, through these powers of coöperation, a factor in their daily lives. They would make it a part of their economic capital. The people and the government of New Zealand stand today as the partners of each other in their industries to an extent unknown elsewhere. They have established what you can perhaps best understand as a sort of family, or Government & Co. Unltd. It investigates the secrets of various kinds of production. It builds railroads so as to stimulate farming industries. It buys a mining patent—a cyanide patent, for instance—and then throws it open to all the people without cost. It provides facilities to the people of selling their produce in the foreign markets. The government will inspect the butter or the cheese or the meat, and if all right will approve it for export.

The government has erected large warehouses, with cold storage free. So far has this system been carried in South Australia that the South Australian farmer, desiring to market a flock of sheep, drives them to the nearest railroad station. He need not follow the sheep any farther. The railroad delivers the sheep to the harbor, where they are left on the wharf. The government then takes these sheep and transports them to the nearest port and there undertakes the business of slaughtering, especially accounting to the South Australian farmer for all the products, the hides, the wool, the meat, etc. The products are then shipped by the government to London and consigned there to the house in London which represents the South Australian farmer, and, to make a long story short, all the farmer has to do is to wait at home until he receives back through the post-office the government check for the proceeds of the same. He does not even have to wait as long as that for all his money, because the government will advance to the South Australian farmer a

certain proportion of the value as a loan.

You will remember how the farmers in Kansas and Nebraska, when the bankers were borrowing money from the government under the subtreasury scheme, proposed that the Government of the United States should loan them something on the value of their crops, as it lends money to the holder of government bonds. Do you remember how that was greeted by all the statesmen and the editors? How these unfortunates were branded as anarchists or something even worse than that? And yet today precisely that same scheme is in actual and successful operation on the other side of the world among a people of related blood, of related institutions, and of related political affiliations.

But while we were doing that the people of New Zealand, as a sort of side issue, gave woman the suffrage. It seemed to them so much a matter of course that a real democracy should not allow any portion of their community, and the best part of it, to be disfranchised that the bill went through in one night, practically without a single dissenting vote.

This last fall New Zealand, first of Christian nations, out of the proceeds of the general taxes, gave its destitute old men and women the old-age pension.

Step with me into the chamber of the minister of railways and get a glimpse of what it means to a people to be the owners of their own highways. All are free to discuss where the lines shall be built, how they shall be operated, what the rate shall be, and so on. Everything is a matter of public discussion—in the newspapers, in the commercial bodies, in the homes, it is the privilege of all to discuss these questions, as they know that the roads are not to be used to make a profit from the people, but are to be used to give the people a great necessity of life at the cost of production. So far is this principle carried that as rapidly as the profits show a tendency to increase, the government cuts down the rate; and this is being done all the time. They are not to be used as a means for fleecing the people. There are different ways of fleecing the people on the railways of the United States. Last year there were killed in all eight thousand, to say nothing of fifty thousand wounded. The death roll of the war was not as great as that of the railways. But in New Zealand, under this public administration of the precept of the highest good to the greatest number, there were killed last year of employés and passengers—not one; and yet by their mileage statistics they were entitled to have killed at least two hundred and fifty.

The traveler will not find the railways equal to the American railways, although in some respects superior. There are no air brakes on them, but neither are there any records of their having been needed. There is no continuous cord through the train, but neither are there any private cars. There is no continuous passage through the train, but neither is there any *credit mobilier* burrowing its way. There are no dining-room cars, neither any merchants' fast lines nor fast-freight lines. The rates are the same, even if it is the treasurer of the road; such a thing as a special rate is unknown. No one could get a special rate. A merchant shipping ten thousand tons could not get a lower rate than one shipping ten tons, no, nor one shipping a million tons. A preferential rate given by an officer of a road in order to enabl his friends to run his business is unknown. So you see what it means to have the railways owned by the people.

I stood on the railway station at Wellington and saw a train full of children, many of them copper-colored Maori boys and girls, on a school excursion. A series of these is arranged by

the government of New Zealand. The children are brought down from the back country into the city to see the ocean harbor and the steamships and the wharves of the great metropolis, and all the sights of a busy city. The government arranged another train as large, which rolled out of Wellington, taking the city children up into the mountains to see the trees and look at the robin, and to hear the crow which there sings the sweetest notes. They were carried out at rates so low that children fifteen years old were carried a hundred miles and back for fifty cents. They carry children to school in New Zealand on these roads.

Of course there is no profit in doing this business at these rates, but I think the people of New Zealand will see their profit in the health of the future fathers and mothers and in the intelligence of their future citizens; and so you see a democracy can make money by losing it.

Let us make a rapid trip to the scene of some of these land operations. There could be nothing more interesting than that. We will go to one of the places where the government has purchased one of the great estates by condemnation, compulsion being ordinarily unnecessary. The owners are usually willing to sell. The owner may be of an advanced age, and he is easily persuaded that his lot would be much pleasanter if he should spend his declining days in cutting coupons and living in clover. He never really does live in clover, you know, but it sounds well.

At Argyle the government had to condemn an estate. They put a woman on a farm of thirty acres. She tells of the passion for land that she had, that had always run in her family. "Why," she said, "the dirt runs in our blood." We looked at her closely, and, seeing the clear, strong face, we thought she was right.

Not far from her is a farmer. He tells how he used to have to work, and take the wages that he was offered. "I go outside to work now only when I have nothing to do upon my land. I go on my horse, and there are potatoes enough in that field to buy the land."

So one of the poorest classes, known as the "cropper," having no capital of his own, compelled to pay his rent by giving an extortionate share of his produce, said: "This rent now under the government is a very different thing from what it was under the former proprietors. And do you know why, sir? The reason is this"—and, indeed, that is the secret—"the reason is that the people want to make little profit out of the people."

In the old days this great estate, from the river on the south to the forest on the north, as far as the eye could see, was owned by one man. The government has taken possession of the land, and now, where there was only one man, there is a population of two thousand people. Now you hear the school bell and the church bell, and the people by their own industry are becoming the proprietors of the land.

And under this system of democratic administration the produce of this land is fourteen times what it was under the monopolists. There is fourteen times as much wealth in wheat and produce as under the old proprietors, to say nothing of the infinitely greater wealth of home and happiness and life.

There was one man, who was a fine type of a worthy Scotchman. He tells of how the former owner was making a tour of the estate with a friend from England. He was feeling pretty good and desirous of showing off, no doubt. He said, "Well, Bruce, wouldn't you like to have a piece of this land?" "Yes, sir; I would, sir." "That is as near as you will ever get to it, Bruce," responded the rich man. Today we find Bruce on that identical spot, the owner of one hundred and fifty acres. We find

him raising eighty bushels of democratic wheat to the acre.

Let us go down to a town where tomorrow morning there is to be divided up among the people one of the great estates which has been taken by the government from the former owner by voluntary negotiation. We find the town filled with people, the very cars on the track used as lodging-houses. The people have come to see the distribution of land on the morrow, and to take advantage of the last opportunity to make a part of that distribution. The method of distribution is worthy of our special attention. They have been waiting for weeks, yes, for months. The land commissioners have been sitting in their respective places to receive applications from those who wanted a chance to get a farm, which is only given to those who are competent to use the land after they have taken it. For months the land had been advertised—the property as it was, the convenience of access, and so on. The necessary investigations are delicate matters, involving the disclosure of personal affairs; but knowing of my efforts in New Zealand and desirous that I should know as much of the operations as possible, the judges allowed me to sit by their side. I have seen few things more interesting or more dramatic than I witnessed as I stood there in the court-house and saw the stream of men and women passing through and listened to the sound of their feet.

There was one man who had for thirty years been working the land. There was a fine, buxom woman, the mother of a family, who applied with her husband. "If I get it, it is his; if he gets it, it is mine," she said. There were three red-cheeked dairy maids who had applied together to triple their chances to get it. Beside the moderator sat the professor of agriculture in a neighboring college, who had to confess that he did not know much about farming. A man from Oklahoma, who had been all over the world, said to me, "It isn't much like Oklahoma, is it?"

And the next morning was the meeting in the court-house, and the streets were full behind it, with the women all pushing forward to the front seats, for it is not considered the thing for the men to have the best places.

Now, these distributions are arranged very simply. All the applications for these farms are put on a sheet and numbered. Then twenty balls, numbering from one to twenty, are put in the ballot-boxes, and these are drawn out, and the number corresponding to the number on the sheet gives the lucky name. These good democrats selected a person who had come from America to represent them in doing that duty, and so upon this occasion it was my happy duty to distribute among the democrats of New Zealand the great estates taken from the monopoly, and never have I done and never will do anything that can give me more satisfaction, unless on some happier day it should come to me to do the same thing for my fellow-citizens.

And so, as each farm was called out, I placed in the box the requisite number of balls, kept my eyes off the balls, closed the door, and stood with my back to it ostentatiously, put my hand, in and drew out the ball, read the number and read out the name of the happy man; and as I picked out balls with the number I saw some flashes of pleasure light up the faces of my dairy maids. They had gotten their farm. It was not much like Oklahoma, was it?

But I want to tell you of how they deal with the unemployed, which is one of the great triumphs of New Zealand politics. Come with me to the viaduct where the government is building a great railway bridge, among the green trees through which gleam the white tents of the workmen. The government gathers up in the streets of the cities and the country roads the men

who want work. Their wives and children are taken with them, because New Zealand people do not believe in separating a man from his family. The man, with his wife and children, are placed upon railroad trains, for the journey is a long one, given lodgings at night, and cared for until they come to the scene of their labors. There they find a government officer in charge of tents of shelter. They are given instructions to work and tools to work with and land of their own to settle upon.

Some who take up land do not know how to farm and have no funds. They are given the land, tools to work it, seeds and teams to plant the land, and are given instructions as rapidly as possible, taught to fell the forest trees and raise the crops, and the government advances them money. We say they are given this and that, but they are *given* nothing. They have to pay for the land, and so well and surely is the scheme managed that they do pay. Their time is divided off, half for themselves and half for the government.

There are many other interesting things to tell you about, but we will pause only for a moment by the side of Magistrate A—, who asked me to sit by him to see him administer this new act of mercy and justice, the old-age pension law.

It is unnecessary for one to be a pauper to become a pensioner. One may have an income of thirty-four pounds a year and still receive a pension, or he may have eighteen pounds a year and still receive a full pension. No, New Zealand is not encouraging the people to become paupers. There are many things to prevent. One may have committed a serious crime or one may be an habitual drinker, and, if so, he cannot get a pension.

It is an international sight to see put into political effect the precepts of Christianity. We look upon the old men and women as they come to be asked questions, and they all kiss the Bible (which is a most unsanitary proceeding, apt to reduce the number of pensioners). Each one must answer as to whether he or she has ever been in prison. One old lady among the applicants had a face so refined and pure the judge could not bear to ask her such a question as that. He looked at her with the utmost benignity as he said, "Now, have you ever been in any trouble?"

The dear old lady said, "Why, yes; I was alone in the house once for six weeks." She had not understood him at all, and so he had to repeat the question in the plain language of the law.

Another thing—they must answer the question which comes in the insurance policies—their age.

And there were a few women, and they all told their age—sixty-five years. New Zealand is the only part of the world where I ever saw a woman of a certain age willing to tell her birth-year. There was a widow who had recently married, and she had given her age as younger than she was, and this year she had given another age in order to get the pension. "I am exceedingly sorry," said the judge, "but you can't give one age to get married and another to get a pension."

There was one very forlorn-looking woman, so old that all her friends had died; every trace of her birth had disappeared, the Bible was gone, her marriage certificate even lost. Then the judge said in the kindliest way, waiving the question of other evidence, "No matter; you look it," and as she heard the words a smile of intense gratification spread over her face.

The New Zealand people say there is nothing which has given them greater satisfaction than the old-age pension law, and you will perhaps understand their satisfaction when I quote this sentence from an official report: "Owing

to the old-age pension law, the aged tramp has disappeared completely from the highways of New Zealand."

Think of a country where the aged tramp has disappeared. Not because he has been trampled down nor put in the poor-house, but because he has been lifted up by the mercy and generosity of the people to a position of security.

Now, there are five proofs of the accuracy of what I am reporting to you. I will give you, briefly, five tests:

First. The will of the New Zealand people, as shown by their elections. The majority of the democracy party has been increased, until today it is stronger than ever.

Second. The experiments of the New Zealand railways, the public works, New Zealand State life insurance have all been successful and are making money.

Third. The country is proceeding still further in the way of its compulsory arbitration. Another point is the success of the experiment made by the legislature of New Zealand, the most interesting of anything done by any legislature of the world—meeting the excesses of the pools and trusts by having the government go into the coal business.

Fourth. The experiments of New Zealand are being imitated by the neighboring nations. Its compulsory arbitration system is in successful operation in New South Wales, Western Australia, and Tasmania. Then the old-age pension law has been adopted by Victoria and New South Wales. If New Zealand is so far on the road to ruin as has been so often said, its neighbors would certainly not be undertaking to follow it. Its customs duties have increased, the number of income-tax payers has doubled, and its net taxes have increased 75 per cent in the last five years.

The New Zealand people, among other freaks, possess a very curious creature called the "wingless bird." When these various experiments in New Zealand set in, the capitalists and monopolists said, "It will ruin the country, and we will certainly leave. We and our money will take flight together."

The people introduced these experiments. They were successful. The country is prosperous.

The capitalists did not take flight. They stayed to share the prosperity. They are now pointed out as the most interesting species of New Zealand's wingless birds.

SUMMER MEETING OF THE AMERICAN FORESTRY ASSOCIATION

AN exceedingly interesting and profitable meeting of the American Forestry Association was held at Lansing, Michigan, August 27 and 28, 1902, under the joint auspices of the Michigan Forestry Commission and the Michigan Agricultural College. The first session was held in the State Capitol, the second and third in the Botanical Laboratory of the Agricultural College, and the final sessions in the State Capitol. Hon. Charles W. Garfield, Vice-President of the Association for Michigan, presided at all of the sessions.

At the conclusion of the meeting an excursion was made to the Michigan Forestry Preserve in Roscommon and Crawford counties, and thence to Mackinac Island, under the guidance of the

members of the Michigan Forestry Commission, Messrs Charles W. Garfield, Arthur Hill, and Edwin A. Wildey.

While the papers read and discussed at the meeting were selected largely because of their application to practical problems in forestry and forest management which today confront the people of Michigan and adjacent states, yet it is believed they contain much information of interest to members of the National Geographical Society. We present below short abstracts of the more important papers. The papers and the discussion thereon will doubtless appear in future numbers of *Forestry and Irrigation*.

A. J. H.

THE MICHIGAN FOREST PRESERVE

BY THOS. H. SHERRARD,
BUREAU OF FORESTRY

Mr Sherrard's paper gave a general description of the physical characteristics of the Michigan Forest Preserve and an idea of the original forests of magnificent white and Norway pine which the preserve once supported. The existing forest covering was classed under five types—swamp, jack pine plain, oak flat, oak ridge, and hardwood land. A scale map was exhibited, showing the distribution of these types in a representative township, and an estimate was given of the possible production of a second crop of timber on these lands, based upon the measurement of existing second growth. An organization was recommended for the practical management of the preserve, which it was estimated would cost $3,000 a year, or five cents per acre. The prime necessity for the maintenance of a fire service during dangerous seasons was urged. The offer of coöperation by the Bureau of Forestry with state organizations was explained, which affords an opportunity for perfecting a sound forest management for the preserve. Mr Sherrard gave an instance of the coöperation of the Bureau of Forestry with a private owner in the management of 100,000 acres of cut-over hardwood forest in northern Michigan.

RELATION OF SOILS TO DISTRIBUTION OF FORESTS IN MIDDLE MICHIGAN

BY PROF. BURTON E. LIVINGSTON, PH. D.,
OF BOTANICAL DEPARTMENT, UNIVERSITY OF CHICAGO

Prof. Burton E. Livingston, of the Botanical Department, University of Chicago, summarized the results of a number of years of study of the flora of the southern and middle counties of the state, and especially of a detailed study of plant distribution in Kent county made last year. A similar study of Crawford and Roscommon counties is now being made by him. The conclusions reached by Professor Livingston were mainly these:

(1) The nature of the soil determines the nature of the forest.

(2) Variations in the chemical nature of the soil are probably not effective in this way in a region of glacial drift.

(3) Variations in the physical nature of the soil are probably the main factor in determining our forest distribution. By physical nature is meant the power of a soil to retain moisture, its so-called "capillary power." The results of an excess or deficiency in moisture is shown

in swamps and barren lands, while tracts moderately drained are covered with a heavy forest growth.

(4) The capillary power of a sandy soil may be increased by the addition of either clay or humus.

FOREST BOTANY SUGGESTS WHAT FOR THE NEW FORESTS OF MICHIGAN?

BY PROF. CHARLES A. DAVIS,
UNIVERSITY OF MICHIGAN

Professor Davis presented a number of suggestions for improvement of forest conditions in Michigan in the light of forest botany. These suggestions may be summarized as follows:

(1) All vegetation which will grow should be protected in order that the soil may be covered.

(2) Tree species, especially such as will grow on lands of the class available, must be protected from fire and cattle in order to reach commercial maturity.

(3) The tree species now growing upon these lands serve as nurse trees and soil cover until more valuable kinds can reëstablish themselves, and will become a source of revenue if allowed to develop.

(4) The white pine will grow upon much of this land, and there is no foundation for the current popular belief that this species will not grow in old pineries.

(5) Belts of oak and poplar, both of which grow readily and are somewhat resistant to fire, could be planted for fire protection.

(6) Foreign species, or those from other parts of the country or other soil conditions, should not be extensively planted until thoroughly tested in experimental tracts.

THE MANAGEMENT OF MICHIGAN HARDWOOD FORESTS

BY WALTER C. WINCHESTER,
GRAND RAPIDS, MICHIGAN

Mr Winchester's view of the forests of Michigan was that of the practical lumberman. He described the conditions at present existing, and reviewed the operations of the lumber industries. "The lumberman buying timber lands today," said Mr Winchester, "is naturally not in sympathy with the principles of forestry." All the products of the forest are utilized; even the ferns growing in the timber are picked and sold in the Chicago market to florists. In Mr Winchester's view the taxes on timber lands are very high, and some remedy must be found in the way of a rebate of taxes to persons who are willing to hold their lands after cutting off the mature timber. In his opinion, the undergrowth, which springs up very rapidly on hemlock and cedar lands, will keep the ground from drying out. The protection of trees of fifty years' growth and under is necessary to preserve large areas of hardwood lands for a new crop. The enactment of taxation laws was urged with this object in view, which would make it a business proposition.

THE JACK PINE PLAINS OF MICHIGAN

BY PROF. FILIBERT ROTH,
GENERAL LAND OFFICE

Professor Roth's paper was an interesting discussion of the important function of the jack pine in covering up and restoring the waste lands and sand plains of the Lake States area. He described the barrenness and desolation of much of the land found to be too poor for agriculture and abandoned by the farmer, who waits for the forest to heal up the many scars he has inflicted on the land. "Fortunately for the Lake States," said Professor Roth, "there is a climate and there is a tree which make this possible and which in time will heal and cover up the dreariest sands. This tree is the pretty jack pine, that frugal scrub among the stately race of northern evergreens. A fertile seeder, with long, closed, resistent cones, a rapid grower, with abundance of crown and foliage, this tree spreads over these barren lands, whether abandoned by other forest trees, ruined by fire, or left to waste by the farmer." The peculiarities of the species were described and its usefulness shown in furnishing a substitute for Norway and white pine, while preparing the way for the return of better species, securing the land against impoverishment, and protecting it when reclaimed.

THE CHIPPEWA FOREST RESERVATION IN MINNESOTA

BY HERMAN H. CHAPMAN,
SUPERINTENDENT STATE EXPERIMENT FARM, GRAND RAPIDS, MINNESOTA

Mr Chapman outlined the forest conditions existing in Minnesota which led to the recent action of Congress in establishing the Chippewa Forest Reserve. One-third of the State of Minnesota is pine land, which has been cut over. A great portion of it is unfit for farming, and the problem for determination is, What shall be done with it? The difficulties in the way of forest reproduction on lands long cut over and abandoned to fires and brush were set forth. Mr Chapman held that practical steps should be taken at the time of cutting the pine. Reforesting should be directed either by state or national authority, and in Minnesota the best opportunity lay in the direction of national control. The recent bill provides for a forest reserve of 200,000 acres, to be under the control of the Chief of the Bureau of Forestry in the United States Department of Agriculture, who shall regulate the cutting of the timber, save seed trees, and protect from fire. Mr Chapman expressed the belief that under wise administration of this measure the pine may be perpetually renewed on this tract.

THE CLIMATE OF THE WHITE PINE BELT

BY PROF. ALFRED J. HENRY,
U. S. WEATHER BUREAU

"The Climate of the White Pine Belt" was the subject of a paper by Prof. Alfred J. Henry, of the United States Weather Bureau, Washington, D. C. Professor Henry pointed out that the white pine reaches its greatest development in that part of the United States which is also the great highway

of cyclonic storms passing across the country from east to west to east, viz., the watershed of the Great Lakes, the St. Lawrence Valley, and northern New England. The climate of this region is characterized by a fairly uniform distribution of precipitation throughout the year, a high percentage of humidity, much cloudiness, and the absence of droughts and hot, dry winds. Although vast tracts of timber have been removed from the forests of this region, no appreciable effect appears to have been produced in its climate.

THE SHIFTING-SAND QUESTION

BY DR JOHN C. GIFFORD,

CORNELL UNIVERSITY

Dr Gifford, who has visited most of the shifting-sand districts both of this country and of Europe, pointed out that the forest performed simultaneously two very important functions in this connection—soil betterment and soil fixation. He explained the necessity of cutting off the supply of sand from the sea by the use of wattle fences, beach grass, bay berry, etc. Many instances were cited to show how sand soil had been both chemically and physically improved by the forest and how it had been thus prevented from doing serious damage to other more valuable property. The reclamation of these sandy lands is of importance because they are usually located in places along the sea where the land is valuable. All these sand lands demand a treatment peculiar to each locality, depending upon the wind, the climate, the nature of the sand, etc. Shifting sands may be divided into two great classes—those along the sea and large bodies of water and those inland. There is less trouble with these sands in this country than in Europe, because, with the exception of some sands in the Great Lakes territory and along the Pacific coast, the prevailing winds are from the west. He described the methods employed in southwestern France and along the Baltic and North Seas. He spoke of the dunes of Michigan and Florida and the sand hills of Nebraska, and described the work done in various sand districts at home and abroad.

THE PERIODICITY OF TREE-GROWTH

BY PROF. E. F. BOGUE,

PROFESSOR OF FORESTRY, MICHIGAN AGRICULTURAL COLLEGE

Professor Bogue presented the results of an investigation of the time as well as the amount of growth of twenty-nine young trees during a period of thirty-five months. The relations of tree-growth to rainfall, frost, and other meteorological conditions were also explained.

THE TRESPASS PROBLEM

BY ERNEST BRUNCKEN

Mr Ernest Bruncken, of Milwaukee, the secretary of the late Wisconsin State Forestry Commission and a well-known writer on forest matters, read a paper on "The Trespass Problem." Public sentiment, he said, did not look on

timber-stealing as a crime. The reason was that the government's ownership of its forest lands was not based on labor and care expended on them, but merely appeared to withhold from the citizens that which nature had freely given to all. The remedy was to bring the public forests under forestal management. When the money of the tax-payers was expended on their protection and improvement public sentiment would no longer countenance timber-stealing. Forestal management implied a force of men on the land to protect it. Among the practical measures advocated were a proper demarcation of the boundaries of forest reserves, their consolidation by acquiring title to private holdings within their limits, and the rapid disposal of all state lands to actual settlers, except those to be held permanently as forest reserves.

THE FIRE PROBLEM, AND HOW TO SOLVE IT

BY H B. AYRES,

U. S. BUREAU OF FORESTRY

At the outset Mr Ayres insisted that fire protection in Michigan depends upon Michigan people. The variety of forest conditions in the state, as influenced by the Great Lakes on the one side and the Great Plains on the other, was noticed, and the constant danger of disastrous fires pointed out, together with its unfavorable effect on timber-land values. Methods of providing against fires were discussed, and the experience of Minnesota, under conditions somewhat similar to those in Michigan, was outlined. An awakened public sentiment, with a constant pressure for the enforcement of legally established measures of defense, is necessary. Mr Ayres summed up the duty of the community at large in a few words: "Let local societies be formed in every community, and let the subject be kept alive, studied, discussed, agitated. Get the people to act earnestly, systematically, persistently, and the fires will be stopped."

MINNESOTA'S SYSTEM OF PREVENTING FOREST FIRES

BY GEN. C. C. ANDREWS,

CHIEF FOREST FIRE WARDEN OF MINNESOTA

General Andrews, who is now serving his eighth year as Chief Forest Fire Warden of Minnesota, described the system in force in that state against forest fires, which is mainly one of prevention. Town supervisors are made fire wardens, who can summon males upward of eighteen years of age to help extinguish fires. A central officer enforces the law. County commissioners award the pay for local service, the state contributing one-third. Some counties are backward in paying, and uncertainty of pay is the weakness of the system. It would be more effective were the state to pay two-thirds and counties one-third. In General Andrews' opinion a great forest fire cannot be extinguished by human power, but can be prevented. The Minnesota system has helped to educate the public to better care of the forests.

THE FARM WOODLOT

BY FRANK G. MILLER,

U. S. BUREAU OF FORESTRY

In Mr Miller's opinion, the planting of forest trees for protection and ornament is commendable, but too much planting has been done with these objects alone in view. Too little attention has been paid to planting trees for profit, and to this omission is frequently due a failure to attain fully the other two objects mentioned. A well-kept woodlot is not only a source of revenue in the posts, cordwood, and materials for farm repairs it furnishes, but it gives character and adds beauty to the home. The appreciating prices of the products of the woodlot, the ease with which such a plantation lends itself to rational management, and the increasing interest in timber culture growing up among the farming classes all argue in favor of extensive commercial planting. If established on an economic basis and then properly handled, the farm forest plantation can be made to yield a net income equal to that which can be realized from agricultural crops.

The lack of intelligent care of the natural woodlot is responsible for its failure to be productive and remunerative. Mr Miller suggested the proper manner in which the forest plantation upon the farm should be handled to produce the best results.

GEOGRAPHIC NOTES

THE BALDWIN-ZIEGLER ARCTIC EXPEDITION

PRELIMINARY press reports and private dispatches give some indication of the outcome of the Arctic expedition led by Evelyn B. Baldwin and financed by William Ziegler. Perhaps the fullest account of the work, difficulties, and results of the expedition is that contained in the following telegrams:

REUTER'S AGENCY DISPATCH

This year's work has been successful. An enormous depot of condensed foods has been established by sledge on Rudolf Land within sight of the Italian Expedition's headquarters. A second depot has been formed in latitude 81° 33', and a third depot at Kane Lodge, Greely Island, which has been newly charted as near the 81st degree of latitude. These large depots, together with the houses and stores left at Camp Ziegler, as well as provisions for the five ponies and 150 good dogs now on board, besides the pack itself, will afford means for a large Polar dash party next year. The fact that all the channels through Franz Josef Land remained blocked by ice during the autumn of 1901 prevented the establishment of depots by steamer last year. The breaking up of the ice early in June compelled us to use our reserve supply of coal, and hence our departure from Camp Ziegler on July 1 in order not to imperial the expedition. We dispatched 15 balloons with 300 messages in June. We have obtained the first moving pictures of Arctic life. We discovered Nansen's hut, recovering the original document left there, and securing paintings of the hut. We have also secured marine collections for the National Museum, new charts, etc. Thirty men, with 13 ponies, 170 dogs,

and 60 sledges, were employed in field-work from January 21 to May 21, this severe work resulting in the destruction of the sledges. This and the depletion of the food for the ponies and the dogs rendered a return imperative.

ASSOCIATED PRESS DISPATCH

TROMSOE, NORWAY. *Sept. 4.*

The public has been deceived by false reports regarding the expedition. Nearly every member has been faithful, and my comrades ought and must have due credit for their work in establishing large depots at Camp Zeigler during March, April, and May. Sometimes they had to traverse the same route ten times. Fifty sleighs were destroyed in this work. Open sea near the depot at Teplitz Bay prevented us from reaching the Duke of Abruzzi's headquarters, and poor ice conditions in 1901 prevented us from establishing depots north of 80 degrees 22 minutes. In this connection the death of half our dogs necessitated the postponement of going to the Pole. Nothing favored returning *via* Greenland.

I believe the record of being farthest north could have been broken, but it would have exhausted our supplies and destroyed the hope of finally reaching the Pole.

Sailingmaster Johannsson's demands to become the America's captain were untenable and unbearable. His threat December 15 to take possession of the ship as captain and deal with the crew in accordance with his own will might have spoiled the expedition's plan if enforced. The ice pilot, as well as the first mate, who had long experience in polar ice, were entitled to recognition. Johannsson's refusal to obey the ice pilot's orders and his declared unwillingness to take the advice of my representatives on the sleigh expedition, together with other well-founded reasons stated to the American consul now here, caused his discharge and the promotion of three of his countrymen, who all followed me in the sleigh expedition and obeyed with pleasure the orders given by myself, my representatives, and the ice pilot.

BALDWIN.

AMERICAN ANTHROPOLOGICAL ASSOCIATION

A SPECIAL interest for anthropologists, and so for students of racial distribution, attached to the meeting of the American Association for the Advancement of Science this year at Pittsburg, June 30–July 3. A need long felt, but growing in intensity during recent years, found promise of satisfaction in the establishment of an association of anthropologists of national character. It was natural that the nucleus for such an association should be found in Section H of the American Association for the Advancement of Science, and the founding meeting was held on June 30 under the chairmanship of Dr Stewart Culin, Vice-President of this Section. This meeting resulted in the formal establishment of an association of anthropologists under the name of the American Anthropological Association. Later two executive sessions of the Association were held, and on Wednesday, July 2, there was a joint meeting of this Association with Section H, at which interesting scientific papers were presented and discussed. Prominent among those taking part in the discussions were William H. Holmes, Harlan I. Smith, J. Walter Fewkes, J. D. McGuire, and Walter Hough. The Association was represented in the Council of the American Association by Professor Holmes and Dr George A. Dorsey. The next regular meeting of the Association will be held at Washington in connection with the winter meeting of the American Association for the Advancement of Science, December 29 to January 3, 1903.

Although the invitations to the organ-

izing meeting were sent to but forty working and teaching anthropologists, one of the most important actions taken at Pittsburg was that by which it was left open to other anthropologists who may be moved to do so during the remaining months of the year to affiliate themselves with the Association and be classed as Founders.

The officers elected were the following:

W J McGee, President.

F. W. Putnam, Vice-President for four years.

Franz Boas, Vice-President for three years.

W. H. Holmes, Vice-President for two years.

J. W. Powell, Vice-President for one year.

George A. Dorsey, Secretary.

Roland B. Dixon, Treasurer.

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The Council includes the following persons: Frank Baker, Henry P. Bowditch, A. F. Chamberlain, Stewart Culin, Livingston Farrand, J. Walter Fewkes, Alice C. Fletcher, J. N. B. Hewitt, Walter Hough, Alés Hrdlicka, A. L. Kroeber, George Grant MacCurdy, O. T. Mason, Washington Matthews, J. D. McGuire, James Mooney, W. W. Newell, Frank Russell, M. H. Saville, Harlan I. Smith, Frederick Starr, John R. Swanton, Cyrus Thomas, and E. S. Wood.

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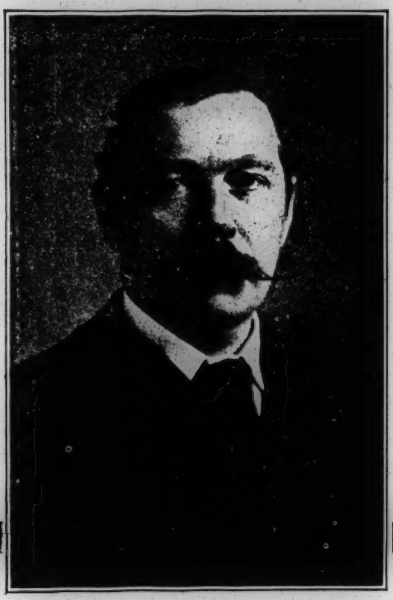

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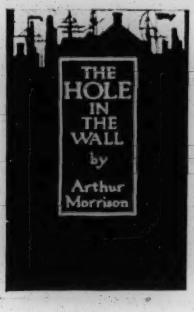

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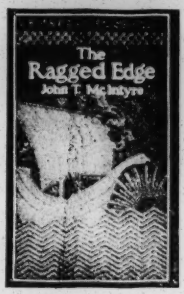

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